APPEAL BRIEF UNDER 37 C.F.R. § 41.37

TABLE OF CONTENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: David B. Kay et al.　　　Examiner: Clement B. Graham

Serial No.: 09/911,839　　　　　　　　　　Group Art Unit: 3692

Filed: July 23, 2001　　　　　　　　　　　Docket: 1546.007US1

For: SYSTEM AND METHOD FOR MEASURING THE QUALITY OF
INFORMATION RETRIEVAL

APPEAL BRIEF UNDER 37 CFR § 41.37

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Appeal Brief is presented in support of the Notice of Appeal to the Board of Patent
Appeals and Interferences, filed on May 30, 2007, from the Final Rejection of claims 1-16 of the
above-identified application, as set forth in the Final Office Action mailed on February 7, 2007.

The Commissioner of Patents and Trademarks is hereby authorized to charge Deposit
Account No. 19-0743 in the amount of $250.00 which represents the requisite fee set forth in 37
C.F.R. § 41.20(b)(2). The Appellants respectfully request consideration and reversal of the
Examiner's rejections of pending claims.

1. REAL PARTY IN INTEREST

The real party in interest of the above-captioned patent application is the assignee, KNOVA SOFTWARE INC., which was acquired by M2M Holdings Inc., a holding company jointly owned by Battery Ventures VI LP and Thoma Cressey Equity Partners. M2M Holdings, Inc. has since undergone a name change to Consona Corp.

2. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant that will have a bearing on the Board's decision in an appeal of this matter.

However, Appellant notes that a Notice of Appeal was previously filed in this case on June 27, 2005, for which an Appeal Brief was also filed on June 27, 2005. In response to the Appeal Brief, the Patent Office re-opened prosecution in an Office Action mailed on January 6, 2006.

3. STATUS OF THE CLAIMS

Claims 1-16 are currently pending in this patent application. A Final Office Action was mailed on January 31, 2007 rejecting claims 1-16. Appellant believes that claims 1-16 stand finally rejected, and their rejection is the subject of the appeal of this matter.

4. STATUS OF AMENDMENTS

No amendments have been made subsequent to the Final Office Action dated January 31, 2007.

5. SUMMARY OF CLAIMED SUBJECT MATTER

This summary is presented in compliance with the requirements of 37 CFR §
41.37(c)(1)(V), mandating a "concise explanation of the subject matter defined in each of the
independent claims involved in the appeal . . ." Nothing contained in this summary is intended
to change the specific language of the claims described, nor is the language of this summary to
be construed so as to limit the scope of the claims or their equivalents in any way.

Therefore, the following summary does not provide an exhaustive or exclusive view of
the present subject matter, and Appellants refer the Board to the appended claims and their legal
equivalents for a complete statement of the invention. Page and line numbers given are
exemplary in nature and not intended to be an exhaustive listing of each and every location
where the particular subject matter can be found in the specification.

Independent claims 1 and 2 respectively relate to a computer-assisted method and a
computer-readable medium for detecting content holes. A content body (see, e.g., FIG. 1 at
115) is accessed, including a first concept node. A percentage of successful service interactions
(see, e.g., Application at page 5, lines 10-20) is determined as a function of concept node (see,
e.g., Application at page 13, lines 2-4). If the percentage of successful service interactions at the
first concept node is below a predefined threshold, a content hole is flagged. (See, e.g.,
Application at page 13, lines 5-10).

Independent claim 3 relates to a computer-assisted method of charging for services. A
percentage of successful service interactions is determined for a typical information retrieval
system. A percentage of successful service interactions for services provided in the defined
information retrieval system is also determined. Billing is determined as a function of the
difference between the percentage of successful service interactions in a typical information
retrieval system and the percentage of successful service interactions for services provided in the
defined information retrieval system. (See Application at page 27, lines 21-28).

Independent claim 5 relates to a computer readable medium having instructions that,
when executed in a computer, implement a method. The method includes accessing a content
body (see, e.g., FIG. 1 at 115), which is organized into a plurality of concept nodes (see, e.g.,

APPEAL BRIEF UNDER 37 C.F.R. § 41.37
Serial Number: 09/911,839
Filing Date: July 23, 2001
Title: SYSTEM AND METHOD FOR MEASURING THE QUALITY OF INFORMATION RETRIEVAL

Page 7
Dkt: 1546.007US1

FIG. 3 at 305), including a first concept node. A percentage of successful service interactions (*see, e.g.,* Application at page 5, lines 10-20) is determined for services provided in a first and second information retrieval system (*see, e.g.,* Application at page 28, lines 8-12). Billing is determined as a function of the difference between the percentage of successful service interactions in a first information retrieval system and the percentage of successful service interactions for services provided in a second information retrieval system that includes weighting successful interactions as a function of concept node. (*See* Application at page 28, lines 6-13).

Independent claim 6 relates to a computer-assisted method for detecting content holes. A content body (*see, e.g.,* FIG. 1 at 115) is accessed, where the content body is organized into a plurality of concept nodes (*see, e.g.,* FIG. 3 at 305), including a first concept node. A percentage of successful service interactions (*see, e.g.,* Application at page 5, lines 10-20) is determined as a function of the concept nodes. A percentage of queries is determined as a function of the concept nodes. A percentage of documents is determined as a function of concept node. A content hole score is computed for the first concept node as the function of at least one of the percentage of successful service interactions, the percentage of queries, and the percentage of documents. (*See* Application at page 26, line 25 – page 27, line 7). A content hole is flagged if the content hole score is below a predefined threshold.

Independent claim 7 relates to a computer-assisted method of charging for services. The method includes determining a number of successful service interactions in an information retrieval system over a period of time. The billing is determined as a function of the number of successful service interactions in the information retrieval system over the period of time. (*See, e.g.,* Application at page 27, line 28 – page 28, line 1).

APPEAL BRIEF UNDER 37 C.F.R. § 41.37
Serial Number: 09/911,839
Filing Date: July 23, 2001
Title: SYSTEM AND METHOD FOR MEASURING THE QUALITY OF INFORMATION RETRIEVAL

Page 8
Dkt: 1546.007US1

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1)   Was a *prima facie* case of obviousness under 35 U.S.C. § 103(a) properly made with respect to claims 1-2, 6, 8-9, 13-14, and 16 over Beattie et al. (U.S. Patent No. 5,659,742) in view of Lim (U.S. Patent No. 6,526,521)?

2)   Was a *prima facie* case of obviousness under 35 U.S.C. § 103(a) properly made with respect to claims 3-5,7, 10-12, and 15 over Beattie et al. (U.S. Patent No. 5,659,742) in view of Lim (U.S. Patent No. 6,526,521) in further view of Arai (U.S. Patent No. 6,714,920)?

7. ARGUMENT

A)   The Applicable Law

Anticipation under 35 U.S.C. § 102 requires the disclosure in a single prior art reference of each element of the claim under consideration. *See Verdegaal Bros. V. Union Oil Co. of California,* 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, "[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.,* 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.,* 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). "The *identical invention* must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.,* 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131 (emphasis added). In interpreting the claims it is widely recognized that a patentee is free to be his own lexicographer. *See, e.g., Autogiro Co. of America v. United States,* 384 F.2d 391, 397 (Ct. Cl. 1967). However, unless a special definition is clearly stated in the patent specification or prosecution history, claim terms are to be given their ordinary and customary meaning in the field of the invention. *See Vitronics,* 90 F.3d at 1582, 39 U.S.P.Q.2d at 1576.

The Examiner also has the burden under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness. *In re Fine,* 837 F.2d 1071, 1074, 5 U.S.P.Q.2d (BNA) 1596, 1598 (Fed. Cir. 1988). First and foremost, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka,* 490 F.2d 981, 180 USPQ 580 (CCPA 1974); M.P.E.P. § 2143.03. In combining prior art references to construct a *prima facie* case, the Examiner must show some objective teaching in the prior art or some knowledge generally available to one of ordinary skill in the art that would lead an individual to combine the relevant teaching of the references. *In re Fine* at 1598. The M.P.E.P. contains explicit direction to the Examiner that agrees with the *In re Fine* court:

> In order for the Examiner to establish a *prima facie* case of obviousness, three
> base criteria must be met. First, there must be some suggestion or motivation,

either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d (BNA) 1438 (Fed. Cir. 1991)).

An invention can be obvious even though the suggestion to combine prior art teachings is not found in a specific reference. *In re Oetiker*, 977 F.2d 1443, 24 U.S.P.Q.2d (BNA) 1443 (Fed. Cir. 1992). However, while it is not necessary that the cited references or prior art specifically suggest making the combination, there must be some teaching somewhere which provides the suggestion or motivation to combine prior art teachings and applies that combination to solve the same or similar problem which the claimed invention addresses. One of ordinary skill in the art will be presumed to know of any such teaching. (See, e.g., *In re Nilssen*, 851 F.2d 1401, 1403, 7 U.S.P.Q.2d 1500, 1502 (Fed. Cir. 1988) and *In re Wood*, 599 F.2d 1032, 1037, 202 U.S.P.Q. 171, 174 (C.C.P.A. 1979)). However, the level of skill is not that of the person who is an innovator but rather that of the person who follows the conventional wisdom in the art. *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 474, 227 U.S.P.Q. 293, 298 (Fed. Cir. 1985). The requirement of a suggestion or motivation to combine references in a *prima facie* case of obviousness is emphasized in the Federal Circuit opinion, *In re Sang Su Lee*, 277 F.3d 1338; 61 U.S.P.Q.2D 1430 (Fed. Cir. 2002), which notes that the motivation must be supported by evidence in the record.

The test for obviousness under § 103 must take into consideration the invention as a whole; that is, one must consider the particular problem solved by the combination of elements that define the invention. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985). References must be considered in their entirety, including parts that teach away from the claims. See MPEP § 2141.02. The fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01.

Recently, the Supreme Court reaffirmed the validity of the "teaching, suggestion, motivation" test in *KSR Int'l Co. v. Teleflex Inc.*, No. 04-1350 (U.S. Apr. 30, 2007) and guidance provided in a PTO Memo of May 3, 2007 recognizes this holding. In addition, the PTO Memo of May 3, 2007 indicated that "analysis supporting a rejection under 35 U.S.C. § 103(a) should be made explicit," citing the Court's decision.

B)   The References

Beattie: The Beattie reference discusses systems and methods for storing information in an information retrieval system having a database for retrieval of the information in response to a query. (*See* Beattie at Abstract).

Lim: The Lim reference discusses a technique that provides access to data storage pathways that enables a failover operation to occur from a first node to a second node when the first node suffers pathway degradation. (*See* Lim at Abstract). The nodes, as described in Lim, are hardware nodes (*see* Lim at col. 6, lines 39-43).

Arai: The Arai reference discusses an information distribution system where if the retrieval information is outputted to a user as an advertisement, the amount of money to be billed for the information is reduced by what the advertisement is worth. (*See* Arai at Abstract).

C.   Discussion of the Rejections

C.1   The rejection of claims 1-2, 6, 8-9, 13-14, and 16 over Beattie in view of Lim

Appellants respectfully submit that a *prima facie* case of obviousness of claims 1-2, 6, 8-9, 13-14, and 16 has not been established because Beattie and Lim, singularly or in combination, fail to disclose all elements of the present claims.

In particular, the cited portions of Beattie fail to describe, teach, or suggest "determining a percentage of successful service interactions as a function of concept nodes," as currently recited in claim 1, and similarly recited in claims 2 and 6. As discussed in a previous response, Appellant respectfully submits that the "relevance scores" described in Beattie can not reasonably be equated with Appellant's "successful service interactions." *See* Response of October 19, 2006. As an illustrative example, Beattie notes "[t]he relevance of the selected information is determined according to matches between the query and the information." (Beattie at col. 6, lines 62-64). The Final Office Action attempts to equate Beattie's selected information with Appellant's claimed "successful service interaction." However, the mere calculation of a

document's relevance to a query—even if expressed as a percentage—is not necessarily the same as determining whether a service interaction was successful from the user's perspective. For example, a query could return many documents—some even with a relevance score of 100 in relation to a query (to use the terminology provided by Beattie); however, the user may not be able to find a document that satisfies the query. Such a query may reasonably be classified as a non-successful service interaction (NSI) and unlike Beattie, under such circumstances, the present system may identify a content hole.

Moreover, Appellant respectfully submits that a portion of the amended claim was not even addressed in the Final Office Action of January 31, 2007. In particular, Appellant's claims currently recite "a content body organized into a plurality of concept nodes to which content is selectively pre-tagged before receiving a user query as part of a service interaction" (emphasis added). As such, there is currently no objective evidence of record that this claim language is disclosed by Beattie and/or Lim.

Moreover, Appellant respectfully submits that it is generally improper to attempt to combine non-analogous references in an attempt to make a showing of obviousness. *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992) (holding "[t]he combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness"). Beattie and Lim come from vastly disparate technical arts and could not reasonably be combined by one with ordinary skill in the art.

In particular, Lim relates to providing access to data storage pathways that connect a cluster of hardware (physical) nodes to a data storage system. Lim discloses a technique for failover operations to occur in a clustered environment when data pathway degradation reaches a pre-determined percentage of full connectivity (*see* Lim col. 2, lines 51-65; col. 9, lines 17-21; and the data storage pathway availability threshold 60, FIG. 2). Lim's monitoring of "percentage" is solely related to the hardware connectivity in the form of data storage pathways used for transferring data to and from physical network storage devices.

In contrast, the present claims 1-2, 6, 8-9, 13-14, and 16 recite a method for detecting content holes within a taxonomy or knowledge map of abstracted concept nodes to which content is tagged. These claims are focused on the quality of content from an end-user perspective,

while Lim is only focused on the quality of the hardware connectivity to a repository (data storage). Lim cannot reasonably be viewed as analogous art to Appellant's claims because it is focused on providing optimal hardware access to physical data storage devices, without regard to—or even knowledge of—the content stored on such data storage devices. By contrast, the present patent application is directed toward the quality of the actual content, regardless of how or where such data is physically stored.

In fact, the ordinary knowledge management artisan would be left unable to combine Lim and Beattie. As the Court of Appeals for the Federal Circuit has recently reiterated, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him capable of combining the prior art references. *See Dystar Textilfarben GmbH v. C.H. Patrick Co.,* No. 06-1088 at 21 (Fed. Cir. October 3, 2006). The *Dystar* decision was described with approval in *KSR Int'l Co. v. Teleflex Inc.* at 18.

The ordinary artisan practicing the present patent application would, at best, be schooled in Knowledge Management, Content Management, and perhaps Software Development. But Lim's focus is hardware connectivity to data storage devices, which requires detailed knowledge of data networking and routing technologies. Appellant respectfully submits that even the most knowledgeable software developer working in the knowledge or content management fields would be unlikely to even be aware of technology described in Lim, much less to have the knowledge to combine Lim and Beattie in any meaningful manner. Further, as discussed above, the combination still fails to yield the claimed invention, since the combination fails to disclose, teach, or suggest determining a percentage of successful service interactions as a function of concept nodes, into which a concept body is organized, and to which content is pre-tagged even before receiving a user query as part of a service interaction.

Because Beattie and Lim fail to disclose, teach, or suggest all elements of claims 1-2, 6, 8-9, 13-14, and 16, and because Beattie and Lim are non-analogous art such that impermissible hindsight would be required for their combination, Appellant respectfully submits that no *prima facie* case of obviousness exists with respect to these claims. Accordingly, Appellant respectfully requests reversal of this basis of rejection of claims 1-2, 6, 8-9, 13-14, and 16.

C2   The rejection of claims 3-5, 7, 10-12, and 15 over Beattie in view of Lim in further view of Arai

Appellants respectfully submit that a *prima facie* case of obviousness of claims 3-5, 7, 10-12, and 15 has not been established because Beattie, Lim, and Arai, singularly or in combination, fail to disclose all elements of the present claims.

In particular, in addition to the failure of these references to describe, teach, or suggest "successful service interactions" as discussed above, Appellant cannot find "billing as a function of the difference between the percentage of successful service interactions in the first information retrieval system and the percentage of successful service interactions in the second information retrieval system" as presently recited in claims 3, 5, and 7. As discussed in the Response of October 19, 2006, Arai apparently instead merely describes billing a user for content that the user accesses and reducing the billing amount by a discount. Response at p. 9, § II, ¶ 3. Apparently, Arai does not describe a first and second information retrieval system, or billing as a function of the difference between successful service interactions at each respective information retrieval system.

Because Beattie, Lim, and Arai fail to disclose, teach, or suggest all elements of claims 3-5, 7, 10-12, and 15, Appellant respectfully submits that no *prima facie* case of obviousness exists with respect to these claims. Accordingly, Appellant respectfully requests reversal of this basis of rejection of these claims.

8. SUMMARY

In summary, because Beattie and/or Lim fail to disclose "concept nodes", or to disclose determining a percentage of successful service interactions as a function of concept node, and because no motivation to combine Beattie and Lim is found in the references themselves or explained from the art in general, Appellant respectfully submits that no *prima facie* case of obviousness exists with respect to claims 1-2, 6, 8-9, 13-14, and 16.

Similarly, because Beattie and/or Lim and/or Arai fail to disclose determining a percentage of successful service interactions (SSIs), billing (charging a customer) as a function of the difference between the percentage of successful service interactions in a typical information retrieval system and the percentage of successful service interactions for services provided in the defined information retrieval system, or charging a customer based on a number of SSIs in an information retrieval system Appellant respectfully submits that no *prima facie* case of obviousness exists with respect to claims 3-5, 7, 10-12, and 15.

Respectfully submitted,

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Date ___June 11, 2007___ By _____

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CLAIMS APPENDIX

1.   A computer-assisted method for detecting content holes, comprising:

accessing a content body organized into a plurality of concept nodes to which content is selectively pre-tagged before receiving a user query as part of a service interaction, wherein the content body includes a first concept node;

determining a percentage of successful service interactions as a function of concept nodes; and

if the percentage of successful service interactions related to the first concept node is below a predefined threshold, flagging a content hole.

2.   A computer-readable medium having instructions that, when executed in a computer, detects content holes-by:

accessing a content body organized into a plurality of concept nodes to which content is selectively pre-tagged before receiving a user query as part of a service interaction, wherein the content body includes a first concept node;

determining a percentage of successful service interactions as a function of concept nodes; and

if the percentage of successful service interactions related to the first concept node is below a predefined threshold, flagging a content hole.

3.   A computer-assisted method of charging for services, comprising:

determining a percentage of successful service interactions in a first information retrieval system;

determining a percentage of successful service interactions for services provided in a second information retrieval system; and

billing as a function of the difference between the percentage of successful service interactions in the first information retrieval system and the percentage of successful service interactions for services provided in the second information retrieval system.

4.   The computer-assisted method according to claim 3, wherein determining a percentage of successful service interactions for services provided in the second information retrieval system includes:

accessing a content body organized into a plurality of concept nodes to which content is selectively pre-tagged before receiving a user query as part of a service interaction, wherein the content body includes a first concept node;

determining a percentage of successful service interactions as a function of concept nodes; and

wherein billing as a function of the difference between the percentage of successful service interactions in the first information retrieval system and the percentage of successful service interactions for services provided in the second information retrieval system includes weighting successful interactions as a function of concept nodes.

5.   A computer-readable medium having instructions when executed in a computer, charges for services by:

accessing a content body organized into a plurality of concept nodes to which content is selectively pre-tagged before receiving a user query as part of a service interaction, wherein the content body includes a first concept node;

determining a percentage of successful service interactions in a first information retrieval system;

determining a percentage of successful service interactions for services provided in a second information retrieval system; and

billing as a function of the difference between the percentage of successful service interactions in the first information retrieval system and the percentage of successful service interactions for services provided in the second information retrieval system , wherein the billing includes weighting successful interactions as a function of concept nodes.

6.   A computer-assisted method for detecting content holes, comprising:

(a) accessing a content body organized into a plurality of concept nodes to which content is selectively pre-tagged before receiving a user query as part of a service interaction, wherein the content body includes a first concept node;

(b) determining a percentage of successful service interactions (SSIs) as a function of concept nodes;

(c) determining a percentage of queries as a function of concept nodes;

(d) determining a percentage of documents as a function of concept nodes;

(e) computing a content hole score for the first concept node as a function of at least one of (b), (c), and (d); and

(f) flagging a content hole if the content hole score is below a predefined threshold.

7.   A computer-assisted method of charging for services, comprising:

determining a number of successful service interactions in an information retrieval system over a period of time; and

billing as a function of the number of successful service interactions in the information retrieval system over the period of time.

8.   The computer-assisted method of claim 1, wherein each concept node represents a concept in the content body.

9.   The computer-assisted method of claim 1, wherein the successful service interaction comprises a query from a user for which returned content matches that user's intent.

10.   The computer-assisted method of claim 3, wherein the successful service interaction comprises a query from a user for which returned content matches that user's intent.

11.   The computer-assisted method of claim 4, wherein each concept node represents a concept in the content body.

12.   The computer-assisted method of claim 4, wherein the successful service interaction comprises a query from a user for which returned content matches that user's intent.

13.   The computer-assisted method of claim 6, wherein each concept node represents a concept in the content body.

14.   The computer-assisted method of claim 6, wherein the successful service interaction comprises a query from a user for which returned content matches that user's intent.

15.   The computer-assisted method of claim 7, wherein the successful service interaction comprises a query from a user for which returned content matches that user's intent.

16.   The computer-assisted method of claim 6, wherein the acts (a) – (f) are performed in the order presented in claim 6.

APPEAL BRIEF UNDER 37 C.F.R. § 41.37
Serial Number: 09/911,839
Filing Date: July 23, 2001
Title: SYSTEM AND METHOD FOR MEASURING THE QUALITY OF INFORMATION RETRIEVAL

Page 20
Dkt: 1546.007US1

EVIDENCE APPENDIX

None.

APPEAL BRIEF UNDER 37 C.F.R. § 41.37
Serial Number: 09/911,839
Filing Date: July 23, 2001
Title: SYSTEM AND METHOD FOR MEASURING THE QUALITY OF INFORMATION RETRIEVAL

Page 21
Dkt: 1546.007US1

RELATED PROCEEDINGS APPENDIX

None.